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from New Grenada, the other from Hayti. If the latter locality is correct, it gives an entirely new distribution for the genus.—It is now some time since M. Fernand Lataste of Paris, showed that the larvæ of the *Batrachia Anura* with opisthocœlous vertebræ have their branchial fissure median, while those with procœlous vertebræ have it on the left side. In a more recent paper¹ this author discusses the position of the genus *Discoglossus* in the system, and gives much new information respecting the habits, varieties and larvæ of the *D. pictus*. He adopts the system proposed by Cope in 1864, in which *Discoglossus* is placed with *Bombinator* and *Alytes* in a special section of the *Anura*, apart from the ranoid and pelobatoid types. M. Lataste creates a number of new names. The distinction in the articular character of the vertebræ had not been used by Cope as the basis of a primary division on account of its uncertainty in some *Cystignathidæ*, but M. Lataste adopts an opposite course. He also gives tribal names to the group with and without ribs, which, in our opinion, increases nomenclature unnecessarily. For this reason we commend his rejection of the new names proposed by M. DeLisle.

OSTEOLOGICAL CONTRIBUTIONS.—Prof. Allen, of Philadelphia, has recently made some interesting observations on the ethmoid and turbinate bones of the Chiroptera, which are noticed in the Bulletin of the Museum of Comparative Zoölogy, Cambridge.² Among other things he finds that in the *Pteropidæ*, *Nycteridæ* and some *Phyllostomidæ*, a horizontal plate extends “from the under free edge of the vertical plate” of the ethmoid “to the nasal septum. The olfactory surface in such forms is thus withdrawn from the respiratory currents, since no direct outlet exists at the posterior nares.”—Prof. E. D. Cope has recently published in the Proceedings of the American Philosophical Society,³ a description of the foramina which perforate the temporal and adjacent parts of the parietal bones of the *Mammalia*. He finds nine of these which are generally constant in position, but present great variety in their occurrence in the different orders, families and genera. Three of them are confined to the *Menotremata* and *Marsupialia*, while there are many of the higher types which do not possess any of them. The largest number is present in the equine *Perissodactyla* and the *Ruminantia*. Prof. Cope's conclusions are stated as follows:

(1.) The sinous foramina furnish valuable diagnostic characters, and may, with proper limitations, be used in systematic definition.

(2.) The primitive condition of the various Mammalian orders, appears to have been the possession of a limited number of these foramina.

¹ Actes de la Société Linneenne de Bordeaux, xxxiii, p. 275, 1879.

² Vol vi, No. 5, Feb., 1880.

³ No. 105, March, 1880.

(3.) The Monotreme-Marsupial line have developed a number of foramina in their own special way.

(4.) The *Rodentia* have chiefly developed those of the inferior part of the squamosal bone, if any.

(5.) The *Carnivora* commenced with but few foramina, and have obliterated these on attaining their highest development.

(6.) The history of the *Quadrumania* is identical with that of the *Carnivora*.

(7.) The *Perissodactyla* present very few foramina in the lowest forms, and did not increase them in the line of the *Rhinoceri*dæ. In the line of the horses an increase in their number appeared early in geologic time, and is fully maintained in the existing species.

(8.) In the Omnivorous division of the *Artiodactyla* time has obliterated all the sinous foramina. In the camels an increased number was apparent at the same geologic period as in the history of the horses (White River or Lowest Miocene), and has been maintained ever since; while the existing *Pecora* present a larger number of the foramina than any of the class of the *Mammalia*.

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GENERAL NOTES.

BOTANY.

THE HUMBLE BEE A DYSTELEOLOGIST AMONG ALPINE FLOWER VISITORS.¹—In the interesting article of which this is an abstract, Dr. Hermann Müller considers the disteleological actions of the alpine humble bee (*Bombus mastrucatus*).

As Haeckel has shown, structures which are useless or harmful to the possessor are at once the most insurmountable obstacles to teleology and the finest foundation for disteleology. Very important among these are rudimentary organs; but this field is much more comprehensive than Haeckel made it, or, indeed, could have made from his morphological standpoint, for rudimentary organs are always at first the morphological results of biological causes, and may always be traced to some change of habits in living beings. Their uselessness begins not with the commencement of atrophy, but with the change of habits which is the cause of this atrophy.

The different living beings of any given place are so variedly and closely connected by their mutual relations that a change in the habits of one species is indicated not only by the consequent uselessness of its own organs but also by the accompanying uselessness of those of other species which were closely adapted to it under former conditions. The numerous, well-determined mutual relations existing between flowers and insects serve especially well

¹ "Bombus mastrucatus, ein Dysteleolog unter den alpinen Blumenbesuchern." Dr. Hermann Müller, Kosmos, Band III, Heft 6, p. 422.